



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,122	02/11/2004	Taiji Noda	60188-766	2607

7590 05/10/2006

Jack Q. Lever, Jr.  
McDERMOTT, WILL & EMERY  
600 Thirteenth Street, N.W.  
Washington, DC 20005-3096

EXAMINER

LEE, CHEUNG

ART UNIT	PAPER NUMBER
2812	

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

52

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

10/775,122

Applicant(s)

NODA, TAIJI

Examiner

Cheung Lee

Art Unit

2812

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 20 April 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: \_\_\_\_\_.  
Claim(s) withdrawn from consideration: \_\_\_\_\_.

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached examiner's response.  
12. ☒ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). 3-13-06  
13. ☐ Other: \_\_\_\_\_.

### ***Response to Arguments***

Applicant's arguments with regard to the rejection under 35 U.S.C. 103(a) have been fully considered, but they are not deemed to be persuasive for at least the following reasons.

1. With respect to claim 1, applicant argues that Khosla appears to disclose implanting boron and fluorine at the same time, therefore, it is impossible for Khosla to teach a structure wherein fluorine is implanted after the implantation of the first impurities. However, Khosla discloses wherein a metal contaminant is first introduced to silicon wafer, and then fluorine or fluorine compound (for instance,  $\text{NF}_3$ ) is introduced to the silicon wafer (col. 4, lines 25-44; see Examples 1 and 2). Since claim 1 does not claim the specific impurity, Khosla's fluorination method in combination with Noda meets the claimed limitation. Besides both a metal contaminant and a boron impurity can get benefits from fluorine introduction resulting in a reduced diffusion (col. 3, line 67-col. 4, line 2).

2. Applicant argues that no motivation can be found for combining the teaching of Khosla with the teachings of Noda. However, the motivation for combining the references were given in the rejection, for example, the motivation for combining Noda with Khosla would have been to achieve reduction of the effects of dopant channeling and diffusion of the impurities. Khosla discloses wherein fluorination is used to neutralize the transition metal impurities in silicon (col. 2, lines 25-33). And Noda discloses the transient enhanced diffusion (TED) problems (col. 2, lines 21-36).

Note that the test of obviousness under 35 USC 103 does not require an expressed suggestion of the claimed invention in the prior art. All that is required to

show obviousness is that the claimed invention would have been made obvious by applying knowledge clearly present in the prior art. *In re Rosselet*, 347 F.2d 847, 146 USPQ 183 (CCPA 1965); *In re Sheckler*, 438 F.2d 999, 168 USPQ 716 (CCPA 1971); *In re Sovish*, 769 F.2d 738, 226 USPQ 771 (Fed. Cir. 1985). The expectation of some advantage is the strongest rationale for combining references (MPEP 2144).

3. Applicant argues that Khosla does not suggest using the gate electrode as a mask during fluorine implantation. Note that applicant's argument is largely directed to what the cited reference teaches individually. However, it is axiomatic that one cannot show nonobviousness by attacking references individually where the rejection, as here, is based on a combination of references. *In re Young*, 403 F.2d 754, 159 USPQ 725 (CCPA 1968); *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). For example, applicant argues that Khosla does not disclose wherein using a gate electrode as a mask as here claimed. However, Noda, not Khosla, is employed in the rejection to show that feature of the claimed process.

4. Also, applicant argues that it would not have been obvious to implant fluorine in the upper portions of the extension implanted layers to reduce diffusion of the first impurity. However, Khosla discloses fluorine implantation neutralizing the transition metal impurities in silicon, so contacting fluorine with implanted impurities is necessary to reduce diffusion of the impurity. Therefore, it would have been obvious to implant fluorine in the upper portions of the extension implanted layers.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheung Lee whose telephone number is 571-272-5977. The examiner can normally be reached on Monday through Friday from 8:30AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheung Lee



May 3, 2006

A handwritten signature in black ink, appearing to read "Ha Nguyen", is positioned above the printed name of the primary examiner.

**HA NGUYEN**  
**PRIMARY EXAMINER**